



The Treatment or Disposal of Secondary Wastes

The [Pueblo Chemical Agent-Destruction Pilot Plant](#) (PCAPP) produces secondary wastes during plant operations and closure. These wastes include items such as personal protective equipment, cleaning materials, equipment parts, dunnage and packing materials.

The safe treatment or disposal of secondary wastes produced during the chemical weapons destruction operations is a key element in successfully destroying the chemical weapons stockpile at the [U.S. Army Pueblo Chemical Depot](#).

Secondary Waste Management

Together with federal, state and local environmental regulators, the pilot plant team has identified secondary wastes and has established procedures for processing them in compliance with all applicable laws. Lessons learned from other chemical weapons destruction facilities are also being applied.

Potentially chemical agent-contaminated materials are monitored for residual agent. If materials are determined to be contaminated, they are treated on site through the appropriate waste handling system, or may be shipped off site for treatment and disposal at an approved treatment, storage, and disposal facility (TSDF) in accordance with state and federal regulations. Worker and environmental safety are not compromised by the off-site shipment and treatment of secondary wastes associated with pilot plant operations. Off-site treatment or disposal of these types of wastes has been safely accomplished by other chemical weapons destruction sites at considerable savings to the taxpayer with acceptance by both the generating and receiving communities.

TSDFs selected to receive these wastes have demonstrated excellent safety and environmental protection records, are subject to strict regulatory oversight, possess adequate equipment and processes, and have established active public involvement programs with their surrounding communities. Transport contractors are properly licensed hazardous material carriers with strong safety and performance records. As appropriate to the nature of a waste, coordination is made with emergency response agencies along selected transportation routes.

Secondary Waste at PCAPP

PCAPP coordinates all secondary waste treatment and/or disposal with the Colorado Department of Public Health and Environment and other agencies as appropriate. Approaches to the disposal of different types of secondary waste material are described in the chart on the next page. These approaches include the Supplemental Decontamination Unit (SDU), used to decontaminate secondary and closure waste materials, and reusable equipment or components. Decontamination is achieved by heating the items to the set temperature (up to a maximum of 240 degrees Fahrenheit) for a duration required to vaporize the agent. The potentially contaminated air from within the SDU is exhausted to the off-gas treatment system (OTS).

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The Treatment or Disposal of Secondary Wastes (cont.)



An additional approach to managing secondary waste is the autoclave. This is used to decontaminate secondary and closure waste materials, and reusable equipment or components. Decontamination is achieved by heating the items to a maximum temperature of 267 degrees Fahrenheit with steam, and then applying a vacuum to cool the contents. The potentially contaminated vapors from within the autoclave are exhausted to the OTS. Potentially contaminated liquids from within the unit are collected and processed in the agent collection and neutralization system.

The [Static Detonation Chamber](#) (SDC), an electrically heated containment vessel located at the Anniston Army Depot in Alabama, is augmenting PCAPP by destroying non-agent contaminated explosive components from the Pueblo stockpile.

Secondary Waste Management Approaches at PCAPP

Waste	Source	Management Method
Carbon	Operations and closure activities	TSDF
Concrete	Maintenance and closure activities	TSDF (if agent contamination concentration is below release criteria)
Energetics (propellants and explosives)	Operations activities	On-site treatment (agent contaminated) Anniston SDC (clean energetics)
Decontaminated munitions bodies, processed through the Munitions Treatment Unit	Operations activities	Recycler
Metallic debris	Operations, maintenance and closure activities	Recycler or TSDF (if agent contamination concentration is below release criteria)
Non-metallic debris	Operations, maintenance and closure activities	TSDF (if agent contamination concentration is below release criteria)
Brine Reduction System solids (salt cake)	Operations	TSDF
Munition Treatment Unit residue	Operations	TSDF
Rubber/rubber-coated items	Operations, maintenance and closure activities	SDU or autoclave (agent contaminated) TSDF (if agent contamination concentration is below release criteria)
Spent decontamination solution	Operations, maintenance and closure activities	On-site disposal
Expired shelf-life chemicals	Laboratory activities	Off-site disposal
Tank, sump and strainer sludge	Maintenance and closure activities	TSDF (non-agent contamination and is considered a sanitary, industrial or hazardous waste) or trash and non-hazardous debris disposal Agent contaminated residuals are dewatered, with liquids sent through the hydrolyzers and solids sent to a TSDF
Used oils	Maintenance and closure activities	Designated vendors
Universal waste (lightbulbs, batteries)	Operations and closure activities	Designated vendors